Operating Manual

iANT2xx Series of Antennas

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1 Introduction

The iANT2xx range of rugged antennas provides a comprehensive selection of antennas that can operate in the UHF, GSM, 2.4GHz or 5.8GHz WiFi frequency bands, all of which are suitable for outdoor use at they have an IP rating of IP66 or higher, and are protected against UV damage and corrosion in offshore environments.

Please Note: The iANT2xx range of antennas is classed as “Simple Apparatus” under international intrinsic safety standards. IEC 60079-25 requires that simple apparatus equipment used in an intrinsically safe electrical system is compliant with IEC 60079-0, IEC 60079-11, IEC 60079-14 & IEC 60079-25. Extronics has assessed the iANT2xx antenna range together with our intrinsically safe certified wireless products to provide solutions compliant to all relevant standards. Therefore iANT2xx antennas can be deployed in a hazardous area, as part of an Extronics system, without the need to undergo further assessment. Compliance is also maintained if an iANT2xx antenna is used with the Extronics iSOLATE500 RF galvanic isolator. If the antenna is not to be used with Extronics’ products, then the system designer must assess the hazard and demonstrate compliance to the relevant standards.

2 Safety Information and Notes

2.1 Storage of this Manual

Keep this user manual safe and in the vicinity of the device. All persons who have to work on or with the device should be advised on where the manual is stored.

2.2 List of Notes

The notes supplied in this chapter provide information on the following.

- Danger / Warning.
  - Possible hazard to life or health.
- Caution
  - Possible damage to property.
- Important
  - Possible damage to enclosure, device or associated equipment.
- Information
  - Notes on the optimum use of the device

Warning	**The iANT2xx series are classified as simple apparatus. The application in which any antennas are to be used, must be assessed for Uo, Io, maximum permissible capacitance and inductance, and PCB width trace/wire gauge in accordance with IEC 60079-11. Do not use an iANT2xx antenna without first contacting Extronics for guidance and recommendations for the use of the iANT2xxs with specific hardware.**

Important	**Installation of this equipment shall be carried out by suitably trained personnel in accordance with the applicable code of practice (IEC 60079-14).**

Important	**The antennas and associated wiring should be periodically inspected for damage, in accordance with the applicable code of practice (IEC 60079-17)**

Warning	**Antennas which are not marked suitable for Group I in Table 1 must NOT be used in Group I or Zone 0.**

Warning	**Aluminium mounting brackets cannot be used in Group I or Zone 0 hazardous areas.**

Warning	**The iANT2xx antennas are an electrostatic charging hazard; clean only with a damp cloth. The iANT2xx antennas should have a label stating that they are an electrostatic hazard.**

Warning	**Do not exceed the Effective Isotropic Radiated Power (EIRP) for the gas group in which the iANT2xx will be operating. The RF output of the transceiver will vary depending on the hardware and antenna used. The maximum hardware limit of the access point must be used to calculate the EIRP – software control by the user of the RF power is not allowed** **- Group IIC – 2W (+33dBm)** **- Group IIB – 3.5W (+35.4dBm)** **- Group IIA/I/III – 6W (+37.7dBm)** **Refer to Table 1 for specific antenna details.**

Important	**iANT2xx are only certified for use in ambient temperatures in the ranges specified in Table 1 and should not be used outside this range.**

Important	**Do not exceed the Effective Isotropic Radiated Power (EIRP) limit for the country / region of operation**

Important	**Repair of the iANT2xx shall only be carried out by the manufacturer. The antenna contains no user-serviceable parts.**

Antenna	Frequency	Max. Gain (dBi)	Pattern	Operating Temperature Range	Max Power IIC (W)	Max Power IIC (dBm)	Max Power IIB (W)	Max Power IIB (dBm)	Max Power IIA (W)	Max Power IIA (dBm)	Max Power Grp I (W)	Max Power Grp I (dBm)	Max Power Grp III (W)	Max Power Grp III (dBm)	T Class at Max RF Power (Group II)	T Class at Max RF Power (Group III)	Suitable for Group I or Zone 0 Use?
iANT200-24	2.4GHz	5	Omni	-30°C to 80°C	0.63	30.5	1.11	30.5	1.9	32.8	1.9	32.8	0.39	25.9	T6 @ 80°C	T135 @ 80°C	Y
iANT200-58	5.8GHz	8	Omni	-30°C to 80°C	0.32	30.5	0.55	27.4	0.95	29.8	0.95	29.8	0.39	25.9	T6 @ 80°C	T135 @ 80°C	Y
iANT212	2.4-5.8GHz	2.5	Omni	-40°C to 85°C	1.12	30.5	1.97	32.9	3.37	35.3	3.37	35.3	0.39	25.9	T5 @ 85°C	T135 @ 85°C	Y
iANT213-QB	806-960MHz/1710-2170MHz	5	Omni	-40°C to 85°C	0.63	28	1.11	30.5	1.9	32.8	1.9	32.8	0.39	25.9	T5 @ 85°C	T135 @ 85°C	Y
iANT213-2400	2.4GHz	6	Omni	-40°C to 80°C	0.5	27	0.88	29.4	1.51	31.8	1.51	31.8	0.39	25.9	T6 @ 80°C	T135 @ 80°C	Y
iANT213-5000	5.8GHz	5	Omni	-40°C to 70°C	0.63	28	1.11	30.5	1.9	32.8	1.9	32.8	0.39	25.9	T6 @ 70°C	T135 @ 70°C	Y
iANT214-2400	2.4GHz	8.5	Sector	-40°C to 80°C	0.28	24.5	0.49	26.9	0.85	29.3	0.85	29.3	0.39	25.9	T6 @ 80°C	T135 @ 80°C	Y
iANT214-2400D	2.4GHz	8	Sector	-40°C to 80°C	0.32	25.1	0.55	27.4	0.95	29.8	0.95	29.8	0.39	25.9	T6 @ 80°C	T135 @ 80°C	Y
iANT214-5000	5.8GHz	14	Sector	-40°C to 80°C	0.08	19.0	0.14	21.5	0.24	23.8	0.24	23.8	0.24	23.8	T6 @ 80°C	T135 @ 80°C	Y
iANT215	2.4-5.8GHz	8	Omni	-40°C to 80°C	0.32	25.1	0.55	27.4	0.95	29.8	0.95	29.8	0.39	25.9	T6 @ 80°C	T135 @ 80°C	Y
iANT216	2.4&5.8GHz	7	Omni	-40°C to 70°C	0.4	26.0	0.7	28.5	0.68	1.2	0.68	1.2	0.39	25.9	T6 @ 70°C	T135 @ 70°C	Y
iANT217	860-960MHz	8	Sector	-20°C to 70°C	0.32	25.1	0.55	27.4	0.95	29.8	0.95	29.8	0.39	25.9	T6 @ 70°C	T135 @ 70°C	Y
iANT218	2.4&5.8GHz	5	Sector	-20°C to 70°C	0.63	28.0	1.11	30.5	1.9	32.8	N/A	N/A	0.39	25.9	T4 @ 70°C	T135 @ 70°C	N
iANT219-2400	2.4GHz	12	Sector	-40°C to 70°C	0.11	20.4	0.2	23.0	0.34	25.3	N/A	N/A	0.34	25.3	T6 @ 65°C	T135 @ 65°C	N
iANT219-5000	5.8GHz	16	Sector	-55°C to 65°C	0.05	17.0	0.09	19.5	0.15	21.8	N/A	N/A	0.15	21.8	T6 @ 65°C	T135 @ 65°C	N
iANT220-2400	2.4GHz	15	Sector	-40°C to 65°C	0.06	17.8	0.11	20.4	0.19	22.8	N/A	N/A	0.19	22.8	T6 @ 65°C	T135 @ 65°C	N
iANT220-5000	5.8GHz	19	Sector	-55°C to 65°C	0.03	14.8	0.04	16.0	0.08	19.0	N/A	N/A	0.08	19.0	T6 @ 65°C	T135 @ 65°C	N
iANT221	2.4&5.8GHz	7.5	Sector	-40°C to 70°C	0.36	25.6	0.62	27.9	1.07	30.3	N/A	N/A	0.39	25.9	T5 @ 70°C	T135 @ 70°C	N
iANT222	2.4GHz	7	Sector	-30°C to 60°C	0.4	26.0	0.7	28.5	1.2	30.8	1.2	30.8	0.39	25.9	T6 @ 60°C	T135 @ 60°C	Y

Table 1: Maximum RF Power Input for iANT200 for ATEX Groups, and ATEX Simple Apparatus T-Class

2.3 Intended Purpose Usage

Important	**Before setting the units to work, read the technical documentation carefully.**

Important	**The latest version of the technical documentation or the corresponding technical supplements is valid in each case.**

The iANT2xx series is built using modern components and is extremely reliable in operation; however it must only be used for its intended purpose. Please note that the intended purpose also includes compliance with the instructions issued by the manufacturer for installation, setting up and service.
Any other use is regarded as conflicting with the intended purpose. The manufacturer is not liable for any subsequent damage resulting from such inadmissible use. The user bears the sole risk in such cases.

2.4 Transportation and Storage

All iANT2xx series devices must be so transported and stored that they are not subjected to any excessive mechanical stresses.

2.5 Authorized Persons

Only persons trained for the purpose are authorized to handle the iANT2xx series; they must be familiar with the unit and must be aware of the regulation and provisions required for explosion protection as well as the relevant accident prevention regulations.

2.6 Cleaning and Maintenance

The iANT2xx series and all its components require no maintenance. All work on the iANT2xx series by personnel who are not expressly qualified for such activities will cause the Ex approval and the guarantee to become void.

Warning	**The iANT2xx series enclosures are an electrostatic charging hazard; clean only with a damp cloth. The iANT2xx antennas should have a label fixed to the enclosure stating that they are an electrostatic hazard.**

2.7 Safety Precautions

Important	**For the installation, maintenance and cleaning of the units, it is absolutely necessary to observe the applicable regulations and provisions concerned with explosion protection (IEC 60079-0, IEC 60079-14) as well as the Accident Prevention Regulations.**

Warning	**The maximum radiated power must not exceed that allowed in the area of installation (IEC 60079-0). IIC -2W, IIB – 3.5W, IIA – 6W**

2.8 Cleaning and Maintenance Intervals

The cleaning intervals depend on the environment where the system is installed.

2.9 Aggressive substances and environments

The iANT2xx series is not designed to come into contact with aggressive substances or environments, please be aware that additional protection may be required.

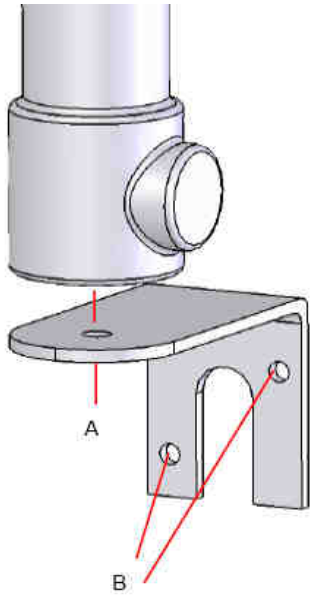
2.10 Exposure to external stresses

The iANT2xx series is not designed to be subjected to excessive stresses e.g. vibration, heat, impact. Additional protection is required to protect against these external stresses.

The iANT2xx series will require additional protection if it is installed in a location where it may be subjected to damage.

3 Mounting Details

3.1 iANT200



Place the antenna bracket into desired location as stipulated in the report and mark the “B” holes.

Remove the bracket and drill two holes using a 6mm drill approximately 30mm deep.

Plug the holes using the red rawl plugs.

Re-align the bracket and fix using suitable screws.

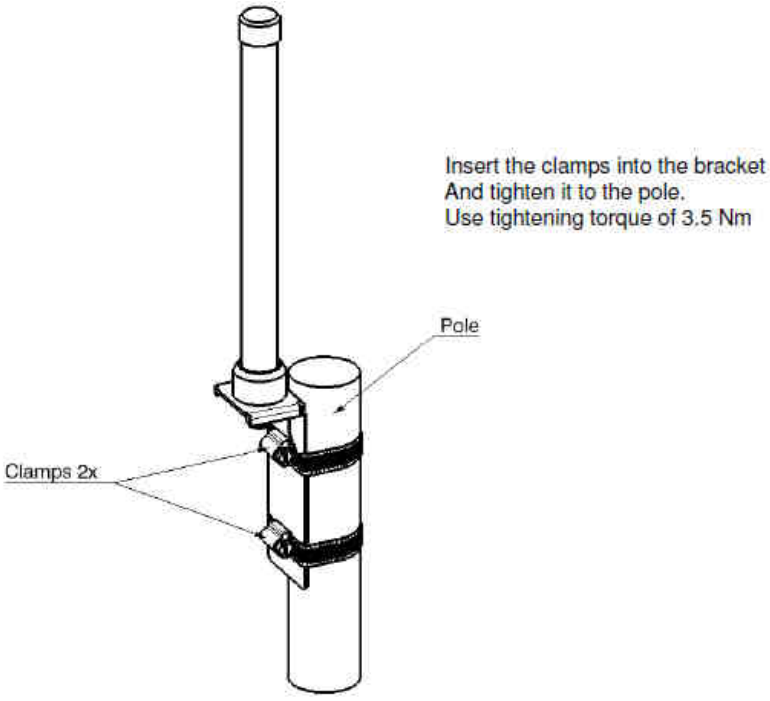
Place the antenna onto the bracket and fix through “A” using M6 lock washer & M6 x10 slotted machine screw.

Attach connector to RF equipment and tidily secure excess cable.

3.2 iANT212

The iANT212 is designed to be mounted directly to wireless devices; therefore no mounting bracket is supplied with this antenna.

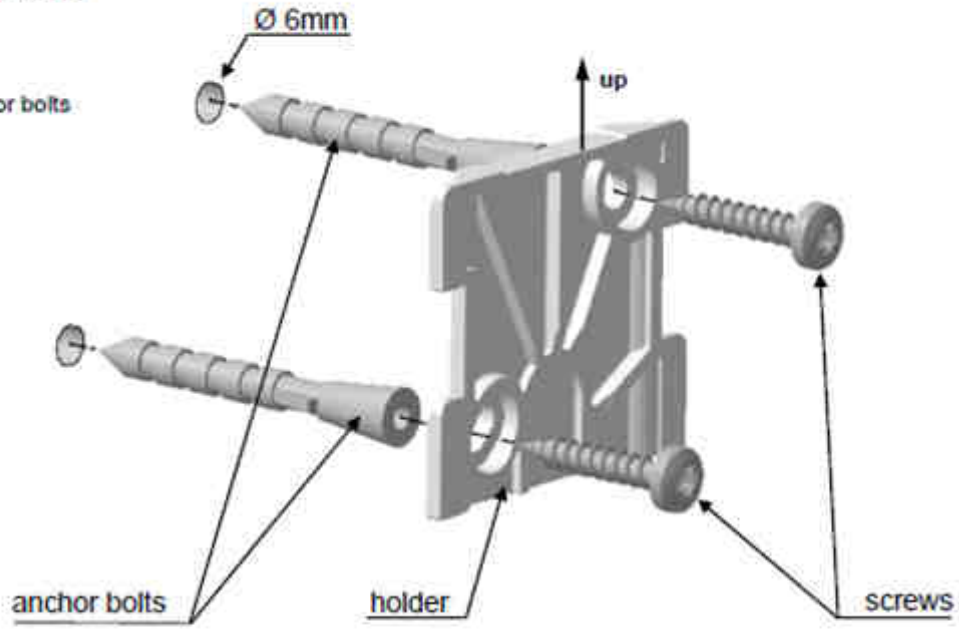
3.3 iANT213



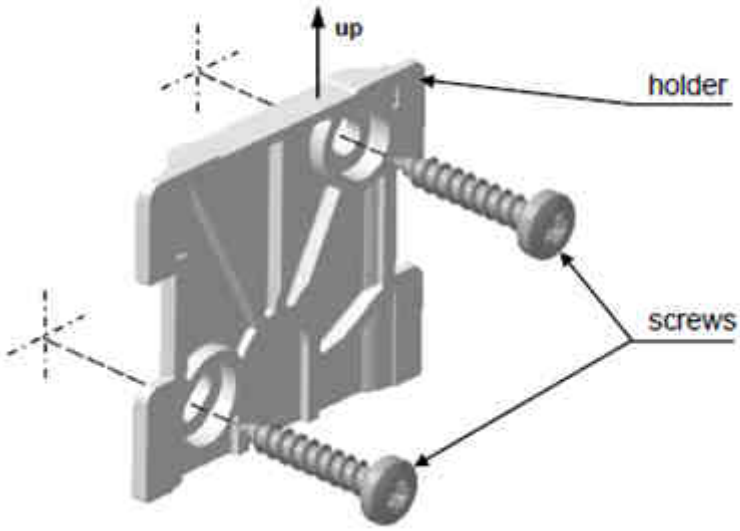
3.4 iANT214

Step 1:
Mount the holder at the wall
(screws and plugs are included)

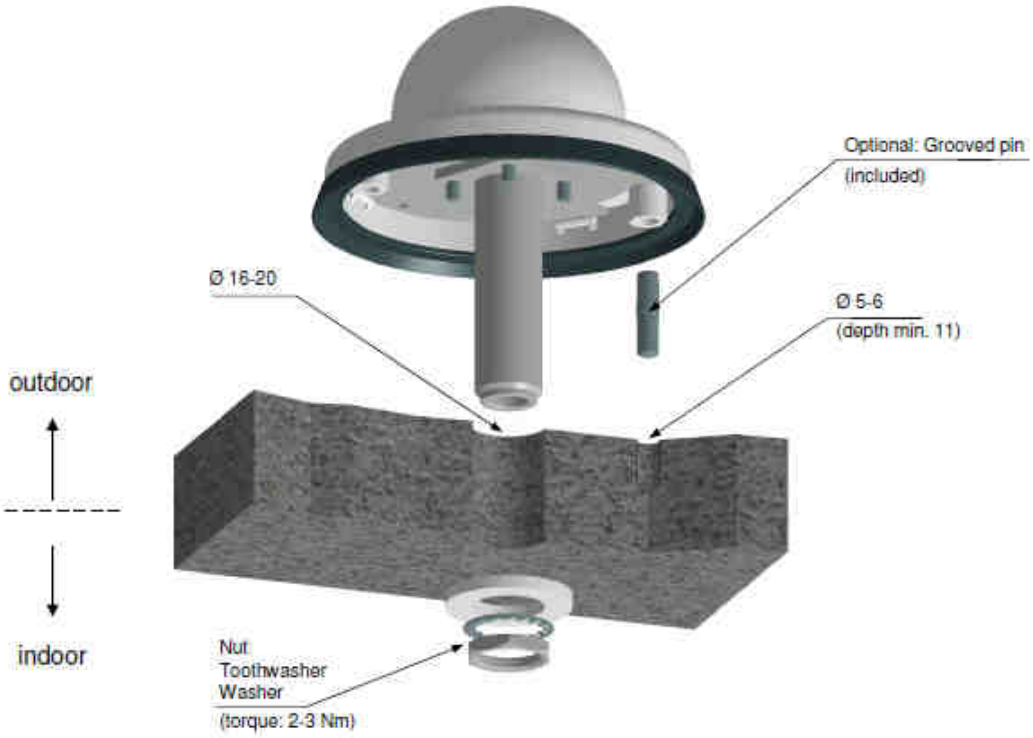
a) mounting with anchor bolts



b) mounting without anchor bolts

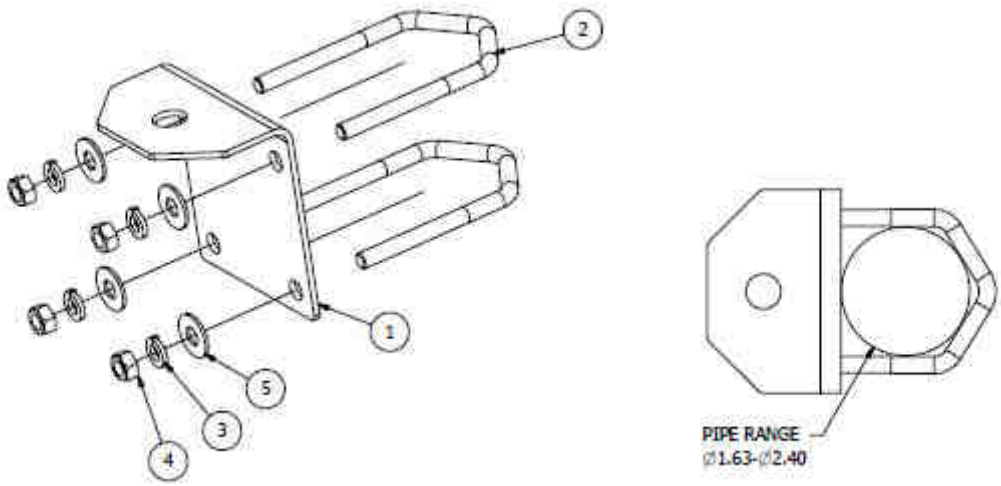


3.5 iANT215



3.6 iANT216

The iANT216 is designed to be mounted directly to wireless devices; alternatively they are supplied with a pole mount bracket as standard.



3.7 iANT217

Mounting bracket is available. The iANT217 is suitable for wall or pole mounting.

Pole mount bracket Extronics part number: iANTMB09

3.8 iANT218 / iANT219 / iANT220 / iANT221

Fig .1

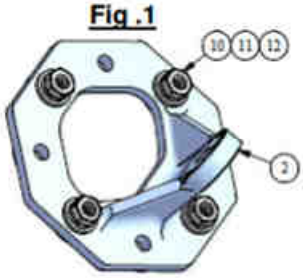
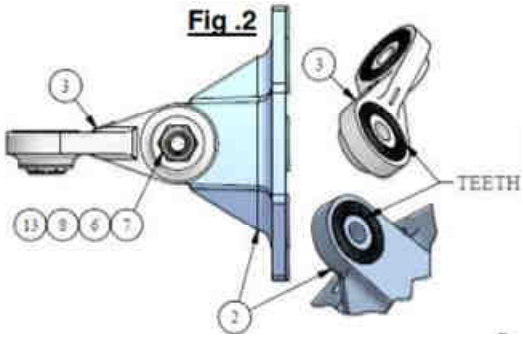


Fig .2



1. Place item No.2 on the antenna, as illustrated in the drawing. Align with the screw holes.

2. Connect item No. 2 to the antenna with spring washers (11), flat washers (10) and nuts (12).

3. Tighten the nuts at a torque of 30 Lbs*In.

4. Connect item No. 3 to item No. 2 ONLY as illustrated in Fig.2, with items 6, 7,8,13. (Teeth of item 2 facing teeth of item 3) Leave screw slightly loose.

5. Connect item No. 3 to item No. 5 as illustrated, with items 6, 7,8,13. (Teeth of item 5 facing teeth of item 3) Leave screw slightly loose.

6. For pole mounting attach items No. 4 and 5 to the pole as illustrated (Fig 4), and connect those using items No. 6, 7, and 9. Close screws (9) one and another in turn up to tightening torque of each screw is 30...35 Lbs·In. Distance between ends of items 4, 5 on one and another side must be equal. NO SKEWNESS ALLOWED.

6a. For wall mounting attach item 5 to the wall (Fig 5). Fasten it with screws 1/4" or M6 using holes "A". (Screws not supplied).

7. Adjust the desired angle, and fully tighten the loose screws (paragraphs 4, 5) at a torque of 30 Lbs·In.

Fig .3

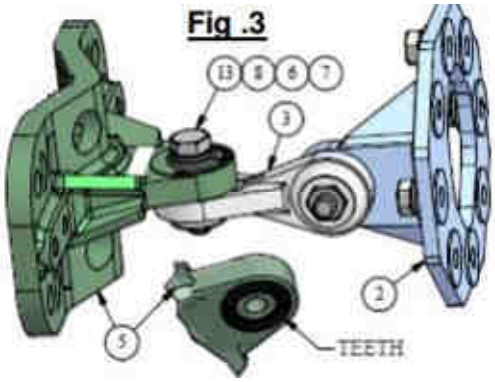


Fig .4

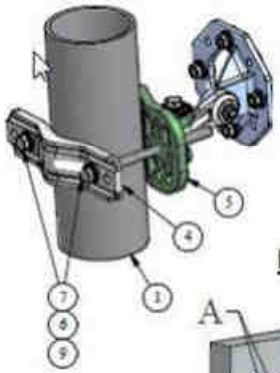
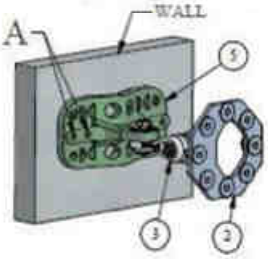
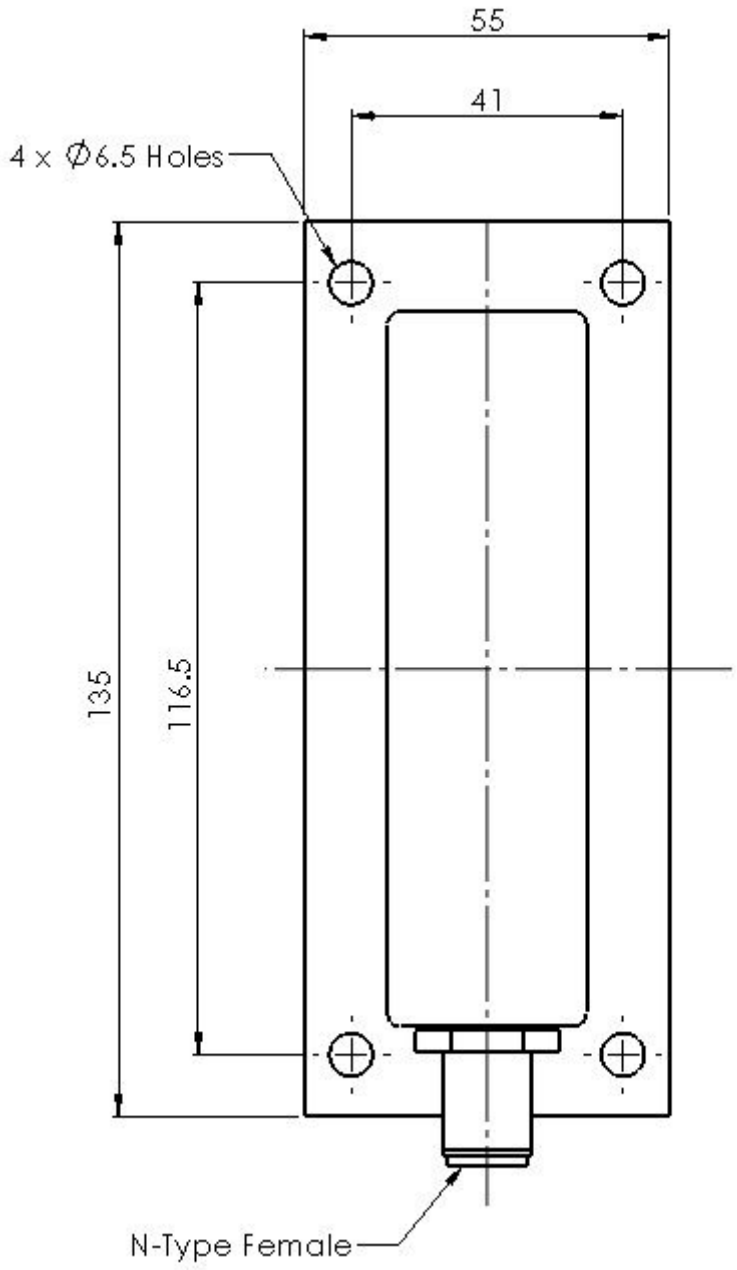


Fig .5



3.9 iANT222



-The antenna can be easily mounted and positioned with the galvanised steel bracket supplied for mast or pole mounting.

4 Technical Data

4.1 iANT200

Dimensions	2.4GHz — 175mm Length, 28mm Diameter 5.8GHz — 205mm Length, 29mm Diameter
Weight	100g
Connections	Dependent on part number (BNC/TNC/SMA + Others on request)
Cable Sealed Lead Length	Supplied as 1 or 5 metre (Others on request)
Frequency Range	2.3—2.5 GHz 5.15—5.875 GHz
Bandwidth	100MHz
Impedance	50 Ohms
Return Loss	Better than 12 dB
Gain	5 dBi @ 2.4 GHz 8 dBi @ 5.8 GHz
VSWR	<2:1
Azimuth (Horizontal) 3dB beamwidth	360 °
Elevation (Vertical) 3dB beamwidth	35 °
Radiation Angle	0 °
Polarization	Vertical
Radiator Element	Brass tubing
Tube Material	GRP, colour white
Base Material	Delrin™
Ambient Temperature	-30°C to 80°C
IP Rating	IP66
Certification	II 1 G Ex ia IIC T5/T6
Certification Type	Simple Apparatus

4.2 iANT212

Dimensions	55mm Length, 22mm Diameter
Weight	50g
Connections	N-Type Male, Bottom
Frequency Range (GHz)	1.7 - 2 2 - 2.7 2.7 - 3.8 4.9 - 5.15 5.15 - 6
Impedance	50 Ohms
Gain	1.5dBi
VSWR	1.1—1.8 :1
Azimuth Beam width (3dB)	360°
Elevation Beam width (3dB)	360°
Polarisation	Spherical
Ambient Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
Radome Material	ASA Plastic
IP Rating	IP67
Certification type	Simple Apparatus
Certification	II 1 G Ex ia IIC T4/T5/T6

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4.3 iANT213

Part Number	iANT213 –2400	iANT213—5000	iANT213-QB
IP Rating	IP 67	IP 67	IP 67
Dimensions	250 x 22 (Height x Diameter)	160 x 16 (Height x Diameter)	410.4 x 38 (Height x Diameter)
Weight	0.3 kg	0.3 kg	0.22 kg
Connector	N, jack (female), bottom	N, jack (female), bottom	N, jack (female), bottom
Wind load	Frontal: 3N, Lateral: 3N at km/h	Frontal: 7N, Lateral: 7N at km/h	Frontal: 7N, Lateral: 7N at km/h
Polarisation	Vertical	Vertical	Vertical
Frequency	2400-2500 MHz	5150— 5875 MHz	806—960 MHz, 1710—2170 MHz
VSWR	1.8	1.7	2.5
Gain (dBi)	6 dBi	5 dBi	4 dBi , 5 dBi
3dB beam width (h) (°)	360	360	360,360
3dB beam width (v) (°)	30	25	40, 20
Vertical Electrical tilt (°)	0	0	0
Mast diameter (mm)	-	38.1—76.2	54—100
Nominal impedance	50 Ω	50 Ω	50 Ω
Composite power max	25 W @ 25 °C	20 W @ 25 ° C	6 W @ 25 ° C
Radome Colour	RAL 7035 light grey	RAL 9002 grey-white	RAL 7035 light grey
Radome material	Glass Fibre	Polypropylene	Glass Fibre
RoHS 2002/95/EC	Compliant	Compliant	Compliant
ELV 2000/53/EC	-	Compliant	-
Flammability rating	-	UL 94-HB	-
Wind speed	Operational: 160 km/h Survival: 220 km/h	Operational: 160 km/h Survival: 220 km/h	Operational: 160 km/h Survival: 200km/h
Environmental conditions	Outdoor	Outdoor	Outdoor
Operating temperature	-40 to 80°C	-40 to 70°C	-45 to 85°C
Storage temperature	-40 to 80°C	-40 to 70°C	-45 to 85°C

4.4 iANT214

	iANT214-2400	iANT214-2400D	iANT214-5000
Frequency (MHz)	2400—2485	2400—2485	5150—5975
VSWR	1.5	1.5	1.5
Gain	8.5 dBi	8dBi	14 dBi
3dB beamwidth (h) (°)	75	75	40
3dB beamwidth (v) (°)	75	70	35
Front to back ratio	12dB	14dB	20 dB
Vertical electrical tilt (°)	0	0	0
Isolation Between Port	-	25dB	-
Nominal impedance	50Ω	50Ω	50Ω
DC Grounded	Yes	Yes	Yes
Polarisation	Vertical	+/- 45° slant	Vertical
Connector	N, jack (female), bottom	SMA jack (female), bottom	N, jack (female), bottom
Composite power max	10W @ 25 °C	10W @ 25 °C	10W @ 25 °C
Dimensions (mm)	101 x 80 x 35 (H x W x D)	101 x 80 x 35 (H x W x D)	101 x 80 x 35 (H x W x D)
Weight	0.11 kg	0.11 kg	0.11kg
Windload	Frontal 15 N at 160 km/h	Frontal 15 N at 160 km/h	Frontal 15 N at 160 km/h
Included mounting material	Wall mounting material	Wall mounting material	Wall mounting material
Environmental conditions	Outdoor	Outdoor	Outdoor
Operation temperature (°C)	-40 to 80	-40 to 80	-40 to 80
Storage temperature (°C)	-40 to 80	-40 to 80	-40 to 80
Transport temperature (°C)	-40 to 80	-40 to 80	-40 to 80
Flammability rating	UL 94-V0	UL 94-V0	UL 94-V0
RoHS 2002/95/EC	Compliant	Compliant	Compliant
IP rating	IP66 / IP67	IP66 / IP67	IP66 / IP67
Radome material	UV stabilized polycarbonate	UV stabilized polycarbonate	UV stabilized polycarbonate
Certification	Simple apparatus	Simple apparatus	Simple apparatus

4.5 iANT215

Dimensions / Weight	50.6 x 86 mm (Height x Diameter) / 0.3kg
IP Rating	IP68
Connections	N-type Jack female
Frequency Range	2400-5470MHz
Impedance	50 Ohms
Gain	6/7/8 dBi
VSWR	1.8/2/1.8
Polarisation	Vertical
Composite power max.	75W@25°C
Wind speed	160km/h
Radome Material / colour	ASA_SAN / RAL 7043
Flammability Rating	DIN 5510-2, BS 6853, NF F16-101/102, CEN/TS 45545 (2009)
Vibration	24hrs as per EN60068-2-64
RoHS	Compliant
Operating temperature	-40°C to 80°C
Certification Type	Simple Apparatus
Mounting	Supplied with Stainless Steel wall/pole mount bracket kit

4.6 iANT216

Dimensions / Weight	260mm x 30 mm (Height x Diameter) / 0.3kg
IP Rating	IP67
Connections	N-type male
Frequency Range	2.4-2.5GHz & 4.94-5.925GHz
Impedance	50 Ohms
Gain	5dBi @ 2.4GHz 7dBi @ 5GHz
VSWR	<2
H plane Beamwidth	360° 2.4GHz Omni 5GHz
E plane Beamwidth	25° 2.4Ghz 15° 5GHz
Polarisation	Vertical
Composite power max.	75W@25°C
Wind speed	125mph
Radome Material / colour	White UV resistant ABS
RoHS	Compliant
Operating temperature	-40°C to 70°C
Certification Type	Simple Apparatus

4.7 iANT217

Gain (max)	7dBi (+/-1 dB)
Gain (min over the band)	6.5 dBi (+/-0.5 dB)
Frequency	860—960 MHz
VSWR	< 1.3:1
Axial ratio	< 1dB
Feed power handling	10 W
Horizontal 3 dB beam width	67 ° (± 5 °)
Vertical 3 dB beam width	69° (± 5 °)
Front to back (F/B ratio)	20 dB (± 3dB)
Nominal input impedance	50 Ohm
Wind loading	160 km/h
Temperature Range	-20° C to +70° C
Shock	40G at 10msec
Thermal Shock	-20° C to +70° C
Water Ingress Rating	IP66 (NEMA 4X)
Dimensions (l x w x d)	245 mm x 235 mm x 40 mm
Weight	470g
Mounting	Not supplied with mounting bracket
RF Connection	Supplied with 0.3m RG58 cable & N-female connector

4.8 iANT218

Gain (max)	3 x 5dBi
Frequency	2.3—2.7GHz & 4.9—6.1GHz
VSWR	1.5:1 (typical), 2:1 (max)
Horizontal 3 dB beam width	120°
Vertical 3 dB beam width	70°
Input Power (max)	20Watt
Nominal input impedance	50 Ohm
Polarisation	Vertical & 2 x Dual Slant ±45°
Radome Material	UV Protected Polycarbonate
Back Plane Material	Aluminium—protected via chemical passivation
Temperature Range	-20° C to +70° C
Vibration	As per IEC60721-3-4
Flammability	-40° C to +70° C
Water Ingress Rating	IP67
Dimensions (l x w x d)	200 mm x 200 mm x 33 mm
Weight	260g
Mounting	Supplied with aluminium wall mount bracket
RF Connection	Supplied with 3 x RG316 cable & N-Male connector

4.9 iANT219

Antenna	iANT219—2400	iANT219—5000
Gain (max)	12.5 dBi	16 dBi
Frequency	2.3-2.7 GHz	4.9—6.1 GHz
VSWR	1.7 :1	17 :1
Polarization, Dual Pole	Linear, (Vertical & Horizontal)	Dual Slant ±45°
3 dB Beam-Width, Az-Plane	90°	90°
3 dB Beam-Width, El-Plane	17°	8°
Side Lobes, min	-12dB	-
Cross Polarization, min	-15dB	-
Port to Port Isolation	-35dB	-30 dB
Front to Back Ratio, min	-20dB	-30 dB
Input power, max	10 Watt	10 Watt
Input Impedance	50 Ohm	50 Ohm
Lighting Protection	DC Grounded	DC Grounded
Dimensions (H x W x D)	370 x 370 x 40 mm (14.5” x 14.5” x 16”)	370 x 370 x 40 mm (14.5” x 14.5” x 16”)
Connector	2 x N-Type, Female	2 x N-Type, Female
Weight	2 Kg	1.8 Kg
Back Plane	Aluminium; protected through chemical passivation	Aluminium; protected through chemical passivation
Radome	UV Protected Polycarbonate	UV Protected Polycarbonate
Mounting	Supplied with aluminium wall mounting bracket	Supplied with aluminium wall mounting bracket
Operating Temperature Range	-55°C to +65°C	-40°C to +65°C
Vibration	According to IEC 60721-3-4	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)	200Km/h (Survival)
Flammability	UL94	UL94
Water Proofing	IP 67	IP 67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11	According to IEC 68-2-11

4.10 iANT220

Antenna	iANT220-2400	iANT220-5000
Gain (max)	Vertical, 15dBi, Dual Slant 12dBi	Vertical, 19dBi, Dual Slant 17.5dBi
Frequency	2.3-2.7 GHz	5.125-6.1 GHz
VSWR	1.7 :1	1.7 :1
Polarization, Dual Pole	Vertical & Dual Slant ±45°	Vertical & Dual Slant ±45°
3 dB Beam-Width, Az-Plane	Dual Slant 38°, Vertical 37°	Dual Slant 20°, Vertical 22°
3 dB Beam-Width, El-Plane	Dual Slant 38°, Vertical 21°	Dual Slant 19°, Vertical 14°
Side Lobes, min	-12dB	-12dB
Front to Back Ratio, min	-30dB	-35dB
Input power, max	10 Watt	10 Watt
Input Impedance	50 Ohm	50 Ohm
Lighting Protection	DC Grounded	DC Grounded
Dimensions (H x W x D)	305 x 305 x 15 mm (12” x 12” x 0.6”)	305 x 305 x 15 mm (12” x 12” x 0.6”)
Connector	3 x N-Type, Female	3 x N-Type, Female
Weight	1.5 Kg	1.5 Kg
Back Plane	Aluminium; protected through chemical passivation	Aluminium; protected through chemical passivation
Radome	UV Protected Polycarbonate	UV Protected Polycarbonate
Mounting	Supplied with aluminium wall mounting bracket	Supplied with aluminium wall mounting bracket
Operating Temperature Range	-40°C to +65°C	-55°C to +65°C
Vibration	According to IEC 60721-3-4	According to IEC 60721-3-4
Wind Load	200 Km/h (Survival)	200 Km/h (Survival)
Flammability	UL94	UL94
Water Proofing	IP 67	IP 67
Humidity	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)	ETS 300 019-1-4, EN 302 085 (Annex A.1.1)
Salt Fog	According to IEC 68-2-11	According to IEC 68-2-11

4.11 iANT221

Gain (max)	2 x 7.5 dBi
Frequency	2.4-2.5GHz & 5.15-5.875GHz
VSWR	1.8: 1
Horizontal 3 dB beam width	70° - 2.5-2.5GHz; 65° - 5.15-5.875GHz
Vertical 3 dB beam width	65° - 2.4-2.5GHz; 60° - 5.15-5.875GHz
Input Power (max)	20 Watt
Nominal input impedance	50 Ohm
Polarisation	Dual Slant ±45°
IP Rating	IP67
Flammability	UL94
Temperature Range	-40°C to +70°C
Vibration	According to IEC 60721-3-4
Back Plane Material	Aluminium; protected through chemical passivation
Radome Material	UV Protected Polycarbonate
Dimensions (l x w x h)	200mm x 200mm x 33mm
Weight	260g
Mounting	Supplied with aluminium wall mount bracket
RF Connector	Supplied with 2 x RG316 cable & N-Male connector
Humidity	ETS 300 019-1-4, EN 302 085 (annex A.1.1)

4.12 iANT222

	iANT222
Frequency (MHz)	2400—2500
VSWR	1.5:1 max
Gain	7dBi
3dB beamwidth (h) (°)	120
3dB beamwidth (v) (°)	60
Beam Tilt (°)	0
Nominal Impedance	50 0hm
Polarisation	Vertical
Connector	N-Type (female), bottom
Maximum input power	100W
Dimensions (mm)	135 x 55 (H x W)
Weight	0.15 kg
Wind loading	130mph
Included mounting material	Wall mounting & pole / mast mount material
Environmental conditions	Outdoor
Operating temperature	-30 to 60°C
RoHS 2002/95/EC	Compliant
IP rating	IP66
Radome material	UV stabilized ABS Plastic
Certification	Simple apparatus

5 Manual Revision

Revision	Description	Date	By
1.0	Modified range – new antennas added. D of C removed, Doc number changed from 320157	25/02/2014	AJP
2.0	Updated range	03/09/2014	BTS